

Trinitron® Color Computer Display

Multiscan 100ES Multiscan 200ES

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CPD-100ES/CPD-100EST
MODEL: **CPD-200ES/CPD-200EST**

Owner's Record

The model and serial numbers are located at the rear of the unit. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture. Dangerously high voltages are present inside the set. Do not open the cabinet. Refer servicing to qualified personnel only.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

INFORMATION

This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1990 (MPR II) for very low frequency (VLF) and extremely low frequency (ELF).

INFORMATION

Ce produit est conforme aux normes du Swedish National Council for Metrology de décembre 1990 (MPR II) en ce qui concerne les fréquences très basses (VLF) et extrêmement basses (ELF).

Hinweis

Dieses Gerät erfüllt bezüglich tieffrequenter (very low frequency) und tiefstfrequenter (extremely low frequency) Strahlung die Vorschriften des „Swedish National Council for Metrology (MPR)“ vom Dezember 1990 (MPR II).

INFORMACIÓN

Este producto cumple las normas del Consejo Nacional Sueco para Metrología (MPR) emitidas en diciembre de 1990 (MPR II) para frecuencias muy bajas (VLF) y frecuencias extremadamente bajas (ELF).

Dieses Gerät entspricht den folgenden europäischen EMV-Vorschriften für Betrieb in Wohngebieten, gewerblichen Gebieten und Leichtindustrieregionen.

EN55022/1994 Klasse B
EN50082-1/1992
EN60555-2/1987

Hinweise

- Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast).
- Aus ergonomischen Gründen flimmern sollten nur Darstellungen bei Vertikalfrequenzen ab 70 Hz (ohne Zeilensprung) benutzt werden.

NOTICE

This notice is applicable for USA/Canada only. If shipped to USA/Canada, install only a UL LISTED/CSA LABELLED power supply cord meeting the following specifications:

SPECIFICATIONS

Plug Type	Nema-Plug 5-15p
Cord	Type SVT or SJT, minimum 3 x 18 AWG
Length	Maximum 15 feet
Rating	Minimum 7 A, 125 V

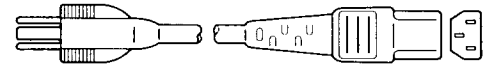
NOTICE

Cette notice s'applique aux Etats-Unis et au Canada uniquement.

Si cet appareil est exporté aux Etats-Unis ou au Canada, utiliser le cordon d'alimentation portant la mention UL LISTED/CSA LABELLED et remplissant les conditions suivantes:

SPECIFICATIONS

Type de fiche	Fiche Nema 5-15 broches
Cordon	Type SVT ou SJT, minimum 3 x 18 AWG
Longueur	Maximum 15 pieds
Tension	Minimum 7 A, 125 V



For CPD-100EST and CPD-200EST only



This monitor complies with the TCO 1992 guidelines for power saving when used with a computer equipped with VESA Display Power Management Signaling (DPMS).



This monitor is ENERGY STAR Compliant when used with a computer equipped with VESA Display Power Management Signaling (DPMS). As an International ENERGY STAR Partner, Sony Corporation has determined that this product meets the International ENERGY STAR Program for efficiency.

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Introduction

Congratulations on your purchase of a Sony Multiscan 100ES/200ES!

This monitor incorporates over 25 years of Sony experience with Trinitron display technology, ensuring excellent performance and outstanding reliability. The Multiscan 100ES/200ES's wide scan range (30 - 70 kHz), together with Digital Multiscan Technology, allows it to sync to any video mode from standard VGA through VESA 1024 x 768 at 85 Hz.

In addition, its two factory preset color modes and one user adjustable color mode give you unprecedented flexibility in matching on-screen colors to hard copy printouts.

Furthermore, the Multiscan 100ES/200ES feature digital controls, raster rotation, power saving, low emissions, and much more. All together, it delivers incredible performance with the quality and support you can expect from Sony.

Precautions

Installation

- Prevent internal heat build-up by allowing adequate air circulation. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, nor in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not place the unit near equipment which generates magnetism, such as a converter or high voltage power lines.

Maintenance

- Clean the cabinet, glass panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzine.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items, like a ball point pen or a screw driver. This type of contact may result in a scratched picture tube.

Transportation

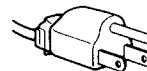
When you transport this monitor for repairing or shipping, use the original carton box and packing materials.

Warning on Power Connection

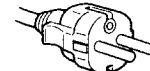
- Use the supplied power cord.

For the customers in U.S.A.

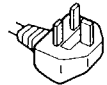
If you do not do this, this monitor will not conform to mandatory FCC standards.



for 100 to 120 V AC



for 220 to 240 V AC



for 240 V only

- Before disconnecting the power cord, wait for at least 30 seconds after turning off the power switch to allow for the discharging of static electricity on the CRT display surface.
- After the power has been turned on, the CRT is demagnetized for approximately 5 seconds. This generates a strong magnetic field around the bezel which may affect the data stored on magnetic tape or disks near the bezel. Place such magnetic recording equipment and tapes/disks at a distance from this unit.

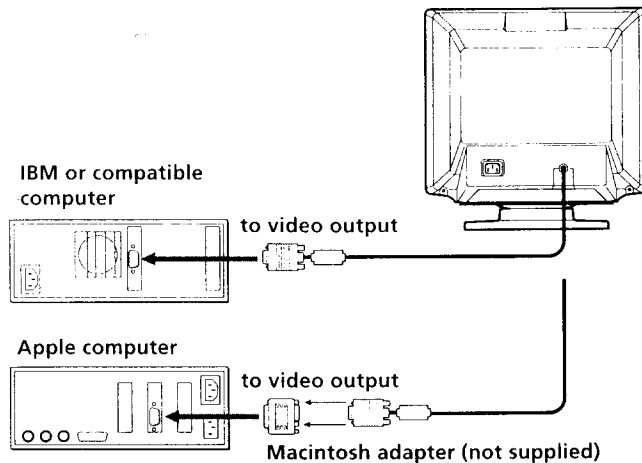
The socket-outlet shall be installed near the equipment and shall be easily accessible.

Getting Started

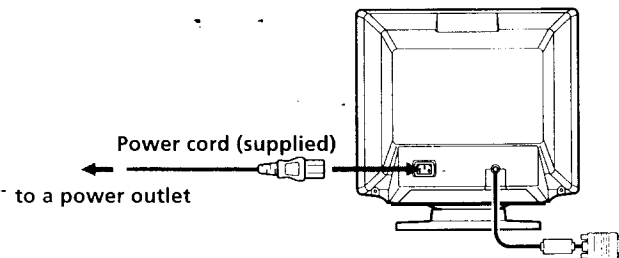
Before using this monitor, please make sure that the following items are included in your package: Multiscan 100ES/200ES monitor (1), power cord (1), warranty card (1), "Windows95 Monitor Information Disk" (1), and this operating instruction manual (1).

This monitor will sync with any IBM or compatible system equipped with VGA or greater graphics capability. Although this monitor will sync to other platforms running at horizontal frequencies between 30 and 70 kHz, including Macintosh and Power Macintosh system, a cable adapter is required. Please consult your dealer for advice on which adapter is suitable for your needs.

Step 1: With the computer switched off, attach the video signal cable to the video output.



Step 2: Attach the power cord to the monitor and the other end to a power outlet.



Step 3: Turn on the monitor and computer.

Step 4: If necessary, adjust the user controls according to your personal preference.

The installation of your Multiscan 100ES/200ES is complete. Enjoy your monitor.

- 1) VGA is a trademark of IBM Corporation.
- 2) VESA is a trademark of the non-profit organization, Video Electronics Standard Association.
- 3) Macintosh is a trademark of Apple Computer Inc.
- 4) Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

Using Your Monitor

Preset and User Modes

The Multiscan 100ES/200ES has factory preset modes for the 8 most popular industry standards for true "plug and play" capability. For less common modes, the Multiscan 100ES/200ES's Digital Multiscan Technology will perform all of the complex adjustments necessary to ensure a high quality picture for any timing between 30 and 70 kHz.

CPD-100ES/100EST and CPD-200ES/200EST

No.	Resolution (dots × lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	640 × 480	31.5 kHz	60 Hz	VGA Graphic ¹⁾
2	640 × 480	43.3 kHz	85 Hz	VESA ²⁾
3	800 × 600	46.9 kHz	75 Hz	VESA ²⁾
4	800 × 600	53.7 kHz	85 Hz	VESA ²⁾
5	832 × 624	49.7 kHz	75 Hz	Macintosh 16" Color ³⁾
6	1024 × 768	60.0 kHz	75 Hz	VESA ²⁾
7	1024 × 768	68.7 kHz	85 Hz	VESA ²⁾
8	1280 × 1024	64.0 kHz	60 Hz	VESA ²⁾

For the customers using the Windows®95

Install the new model information of the Sony computer display from "Windows95 Monitor Information Disk" into your PC. (To install the file, refer to the attached "About the Windows95 Monitor Information Disk/File".)

This monitor complies with "VESA DDC", the standards of Plug&Play. If your PC/graphic board complies with DDC, select "Plug and Play Monitor (VESA DDC)" or this monitor's model name (CPD-100ES/100EST or CPD-200ES/200EST) as "Monitor type" from "Control Panel" on Windows95. Some PC/graphic boards do not comply with DDC. Even if they comply with DDC, they may have some problems on connecting to this monitor. In this case, select this monitor's model name (CPD-100ES/100EST or CPD-200ES/200EST) as "Monitor type" on Windows95.

Recommended horizontal timing conditions

Horizontal sync width should be: >1.0 μsec.
 Horizontal blanking width should be: >3.6 μsec. (Multiscan 100ES)/
 >3.0 μsec. (Multiscan 200ES).
 Vertical sync width should be: < 560 μsec.

Note

CPD-100ES/100EST and CPD-200ES/200EST does not apply to Macintosh 21" color mode.

Adjustments

When one of the preset-type signals is input, no picture adjustment is necessary. You can, however, adjust the picture to your preferences by following the procedure described below. You can adjust all items on the OSD (On Screen Display).

- Before adjusting the items, turn on the unit and feed the video signal from the connected computer/work station.
- Adjustments will be stored automatically.

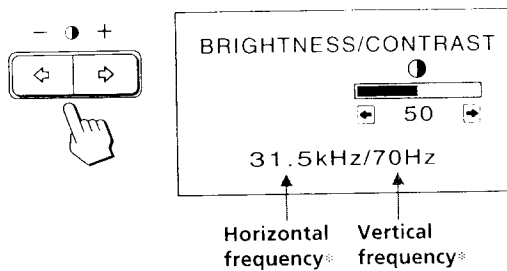
Control Panel



Adjusting the Picture Contrast

The adjustment data becomes the common setting for all input signals.

- 1 Press the button. The "BRIGHTNESS/CONTRAST" OSD appears.



- 2 Press the buttons to adjust picture contrast.
 - ... for more contrast
 - ← ... for less contrast

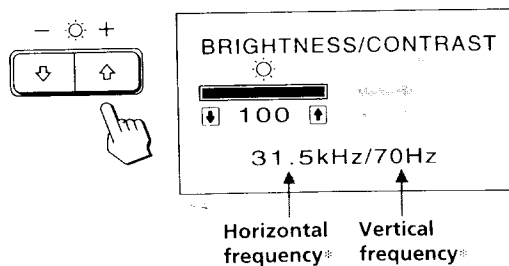
The "BRIGHTNESS/CONTRAST" OSD disappears 3 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Adjusting the Picture Brightness

The adjustment data becomes the common setting for all input signals.

- 1 Press the button. The "BRIGHTNESS/CONTRAST" OSD appears.



- 2 Press the buttons to adjust picture brightness.
 - ↓ ... for less brightness
 - ↑ ... for more brightness

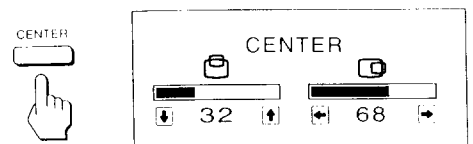
The "BRIGHTNESS/CONTRAST" OSD disappears 3 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

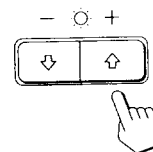
Adjusting the Picture Centering

The adjustment data becomes the individual setting for each input signal received.

- 1 Press the CENTER button. The "CENTER" OSD appears.

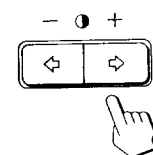


- 2 For vertical adjustment Press the buttons.



↑ ... to move up
↓ ... to move down

- For horizontal adjustment Press the buttons.



← ... to move left
→ ... to move right

To erase the "CENTER" OSD, press the CENTER button again. The "CENTER" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

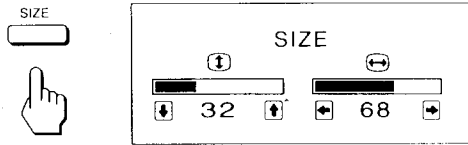
* The horizontal and vertical frequencies for each input signal received appear on the "BRIGHTNESS/CONTRAST" OSD.

Adjustments

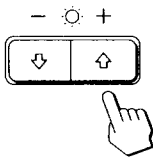
Adjusting the Picture Size

The adjustment data becomes the individual setting for each input signal received.

- 1 Press the SIZE button.
The "SIZE" OSD appears.

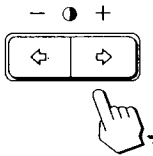


- 2 For vertical adjustment
Press the buttons.



↑ ... to enlarge
↓ ... to diminish

- For horizontal adjustment
Press the buttons.



← ... to diminish
→ ... to enlarge

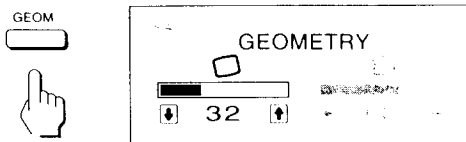
To erase the "SIZE" OSD, press the SIZE button again.
The "SIZE" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

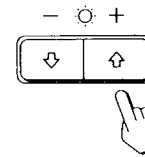
Adjusting the Picture Rotation

The adjustment data becomes the common setting for all input signals.

- 1 Press the GEOM button.
The "GEOMETRY" OSD appears.



- 2 Press the buttons.
↑ ... to rotate clockwise
↓ ... to rotate counterclockwise



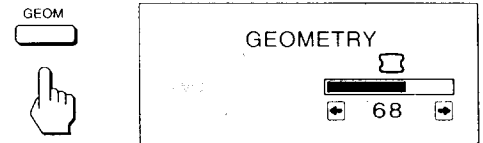
To erase the "GEOMETRY" OSD, press the GEOM button again.
The "GEOMETRY" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

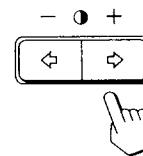
Adjusting the Pincushion

The adjustment data becomes the individual setting for each input signal received.

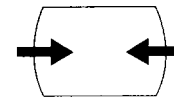
- 1 Press the GEOM button.
The "GEOMETRY" OSD appears.



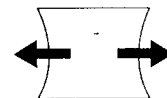
- 2 Press the buttons.



← ... to diminish the picture sides



→ ... to expand the picture sides



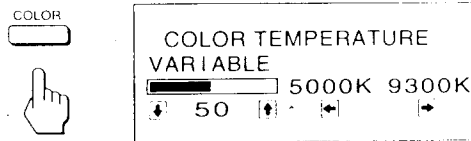
To erase the "GEOMETRY" OSD, press the GEOM button again.
The "GEOMETRY" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Setting the Color Temperature

The selected color temperature becomes the common setting for all input signals.

- 1 Press the COLOR button.
The "COLOR TEMPERATURE" OSD appears.

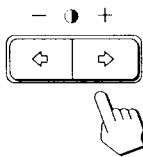


- 2 Adjust with the ◀ ▶ and ▲ ▼ buttons.

To select 5000K or 9300K

Press the ◀ ▶ buttons.

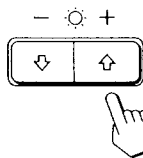
The selected color temperature is indicated in yellow.



- ◀ ... to select 5000K
- ▶ ... to select 9300K

To obtain the desired color temperature between 5000K and 9300K

Press the ▲ ▼ buttons.



- ▲ ... for higher temperature
- ▼ ... for lower temperature

Your most recent adjusted color temperature will be recalled by pressing the ▲ ▼ button.

To erase the "COLOR TEMPERATURE" OSD, press the COLOR button again.

The "COLOR TEMPERATURE" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Resetting the Adjustment Data to Factory-preset Levels

To reset an adjustment item

Press the button of the adjustment item you want to reset, and then press the RESET button before the OSD (On Screen Display) disappears.

To reset all adjustment data at once (for the received signal)

Press the RESET button when no OSD is shown.



To reset all adjustment data to factory-preset levels

Press and hold the RESET button for more than 2 seconds. All adjustment data are reset to factory-preset levels.



E

Entering New Timings

When using a video mode that is not one of the factory preset modes, some fine tuning may be required to optimize the display to your preferences. Simply adjust the monitor according to the preceding adjustment instructions. The adjustments will be stored automatically and recalled whenever that mode is used.

A total of 8 user-defined modes can be stored in memory. If the 9th mode is entered, it will replace the first.

Power Saving Function

This monitor meets the power saving guidelines set by the International ENERGY STAR Program as well as the more stringent TCO92 803299 (NUTEK) guidelines. It is capable of reduced power consumption when used with a computer equipped with Display Power Management Signaling (DPMS). By sensing the absence of the sync signal coming from the computer, it will reduce the power consumption as follows:

CAUTION: The Power Saving function will automatically put the monitor into Active-off state if the power switch is turned on without any video signal input. Once the horizontal and vertical syncs are sensed, the monitor will automatically return to its Normal operation state.

	State	Power consumption	Required resumption time	POWER indicator
1	Normal operation	≤ 110 W	—	green on
2	Stand-by (1st step of power saving)	≤ 15 W	approx. 3 sec.	Orange and green flashes alternately
3	Suspend (2nd step of power saving)	≤ 15 W	approx. 3 sec.	Orange and green flashes alternately
4	Active-off (3rd step of power saving)	≤ 8 W	approx. 10 sec.	Orange on
5	Power-off	0 W	—	off

Plug and Play

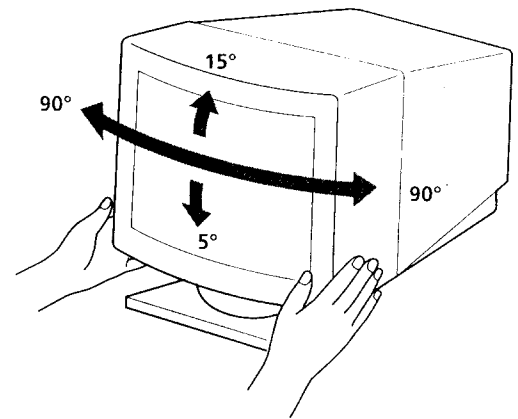
This monitor complies with DDC™1 and DDC2B, which are the Display Data Channel (DDC) standards of VESA. When a DDC1 host system is connected, the monitor synchronizes with the V. CLK in accordance with the VESA standards and outputs the EDID (Extended Display Identification Data) to the data line.

When a DDC2B host system is connected, the monitor automatically switches to the DDC2B communication.

DDC™ is a trademark of the Video Electronics Standard Association.

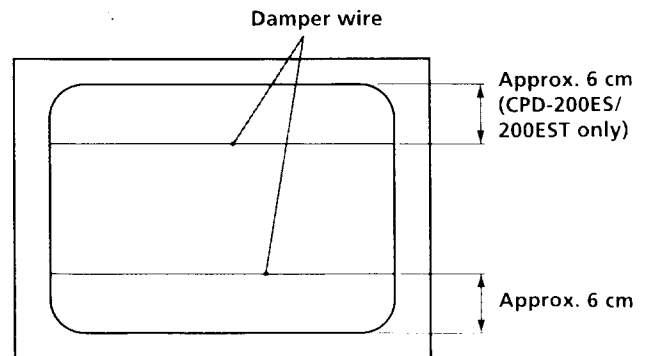
Use of the Tilt-Swivel

With the tilt-swivel, this unit can be adjusted to be viewed at your desired angle within 180° horizontally and 20° vertically. To turn the unit vertically and horizontally, hold it at its bottom with both hands.



Damper Wire

Using a white background, very thin horizontal stripes on the screen are visible as shown on the illustration. These stripes are damper wires. These wires are attached to the aperture grille inside the Trinitron tube and are there to dampen vibrations of the aperture grille in order to prevent them from influencing the picture quality.



Specifications

CPD-100ES/100EST

Picture tube	0.25 mm aperture grille pitch 15 inches measured diagonally 90-degree deflection
Viewable image size	Approx. 285 × 214 mm (w/h) (11 1/4 × 8 1/2 inches) 14.0" viewing image
Logical resolution	Horizontal: Max. 1280 dots Vertical: Max. 1024 lines
Physical resolution	Horizontal: Max. 1024 dots Vertical: Max. 768 lines
Standard image area	Approx. 270 × 202 mm (w/h) (10 3/4 × 8 inches)
Deflection frequency	Horizontal: 30 to 70 kHz Vertical: 50 to 120 Hz
AC input voltage/current	100 to 120 V, 50/60 Hz, 1.8 A 220 to 240 V, 50 – 60 Hz, 1 A
Dimensions	Approx. 368 × 392 × 389 mm (w/h/d) (14 1/2 × 15 1/2 × 15 3/8 inches)
Mass	Approx. 14 kg (30 lb 14 oz)

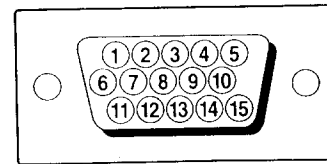
CPD-200ES/200EST

Picture tube	0.25 mm aperture grille pitch 17 inches measured diagonally 90-degree deflection
Viewable image size	Approx. 327 × 243 mm (w/h) (12 7/8 × 9 5/8 inches) 16.0" viewing image
Logical resolution	Horizontal: Max. 1280 dots Vertical: Max. 1024 lines
Physical resolution	Horizontal: Max. 1280 dots Vertical: Max. 1024 lines
Standard image area	Approx. 312 × 234 mm (w/h) (12 9/32 × 9 7/32 inches)
Deflection frequency	Horizontal: 30 to 70 kHz Vertical: 50 to 120 Hz
AC input voltage/current	100 to 240 V, 50/60 Hz, 1.8 A 220 to 240V, 50 – 60 Hz, 1 A
Dimensions	Approx. 406 × 431.5 × 420 mm (w/h/d) (16 × 17 × 16 5/8 inches)
Mass	Approx. 18.5 kg (40 lb 13 oz)

Pin assignment

Video signal cable (HD15) (Male)

The cable accepts RGB video signals (0.714 Vp-p, positive), and SYNC signals.



Pin No.	Signal	Pin No.	Signal
1	Red	8	Blue Ground
2	Green (Composite Sync on Green)	9	—
		10	Ground
		11	Ground
3	Blue	12	Bi-Directional Data (SDA)*
4	Ground		
5	Ground	13	H. Sync
6	Red Ground	14	V. Sync
7	Green Ground	15	Data Clock (SCL)*

* Display Data Channel (DDC) Standard by VESA.

Design and specifications are subject to change without notice.

Troubleshooting

This section may help you isolate a problem and as a result, eliminate the need to contact technical support, allowing continued productivity.

No picture

- ➔ If the ⏻ POWER indicator is not lit.
 - Check that the power cord is properly connected.
 - Check that the ⏻ POWER switch is in the "ON" position.
- ➔ If the ⏻ POWER indicator is flashing in green and orange alternately.
 - Check that your computer power switch is in the "ON" position.
 - The monitor will recover when you press any key on the keyboard of the computer.
 - Check that the video cable is properly connected.
 - Ensure that no pins are bent or pushed in the HD15 connector of the cable.
 - Check that the video card is seated completely in a proper bus slot.
 - Check that the video sync signal is within that specified for the monitor.
 - If using a Macintosh system, check that a proper HD15 - D15 adapter is provided to work correctly with your Macintosh.
 - The monitor has a self-diagnose function. After disconnecting the video signal cable from the computer, turn on the ⏻ POWER switch of the monitor. Press and hold the "+" side of the ⏻ button for 2 seconds, then color bars will appear. The monitor is operating normally if the red, green, and blue color bars appear. Contact the maker of the computer to which the monitor is connected.
- ➔ If the ⏻ POWER indicator is flashing.
 - There is a potential monitor failure. Contact your dealer.

If the message of "OUT OF SCAN RANGE" appears on the screen

- ➔ Check that the video sync signal is specified for the monitor.

Picture is scrambled

- ➔ Check your graphics board manual for the proper monitor setting on your Multiscan 100ES/200ES.
- ➔ Check this manual and confirm that the graphic mode and the frequency at which you are trying to operate is supported. Even within the proper range some video boards may have a sync pulse that is too narrow for the monitor to sync correctly.

Color is not uniform

- ➔ If the monitor is close to any potential sources of magnetic fields such as a speaker, or you turn the monitor while the ⏻ POWER switch is in the "ON" position, color may not be uniform. Trip the ⏻ POWER switch once to activate the Auto-degauss cycle*.

Picture is flickering

- ➔ If the refresh rate is not appropriate, the picture may flicker. Set the refresh rate of the non-interlace mode as high as possible on the computer. For details on how to set the refresh rate, consult the dealer of your computer or video board.

Screen image is not centered or sized properly

- ➔ Adjust the "CENTER," "SIZE," or "GEOMETRY" on the OSD (pages 5, 6).
- ➔ Some video modes do not fill the screen to the edge of the monitor. There is no single answer to solve the problem. There is a tendency to have this problem on higher refresh timings and Macintosh video timings.

Picture is fuzzy

- ➔ Adjust the "CONTRAST" and "BRIGHTNESS" on the OSD (page 5). We have come across several brands of SVGA boards that have an excessive video output level which creates a fuzzy picture at max contrast.
- ➔ Trip the ⏻ POWER switch once to activate the Auto-degauss cycle*.

Picture bounces or has wavy oscillations

- ➔ Isolate and eliminate any potential sources of electric or magnetic fields. Common causes for this symptom are electric fans, fluorescent lighting, laser printers, and so on.
- ➔ If you have another monitor close to this monitor, increase the distance between them to reduce the interference.
- ➔ Try plugging the monitor into a different AC outlet, preferably on a different circuit.
- ➔ Try the monitor on a completely different computer in a different room.

Picture appears to be ghosting

- ➔ Eliminate the use of video cable extension cables and/or video switch boxes if this symptom occurs. Excessive cable length or weak connections can produce this symptom.

A fine horizontal line (wire) is visible

- ➔ This wire stabilizes the vertically striped Aperture Grille (page 8). This Aperture Grille allows more light to pass through to the screen giving the Trinitron CRT more color and brightness.

Wavy or elliptical (moire) pattern is visible

- ➔ Due to the relationship between resolution, monitor AG pitch and the pitch of some image patterns, certain screen backgrounds, especially gray, sometimes show moire. This can only be eliminated by changing your desktop pattern.

Just after turning the monitor on, a "boon" noise is heard

- ➔ Just after turning the monitor on, a noise may be heard for about 3 seconds. This noise is not failure, it is caused by the Auto-degauss cycle*.

* The Auto-degauss function demagnetizes the metal frame of the CRT to obtain a neutral field for uniform color reproduction. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

- If the problem persists, call your authorized Sony dealer from a location near your monitor.
- Note the model name and the serial number of your monitor. Also note the make and name of your computer and video board.